To: Hooper, Charles A.[Hooper.CharlesA@epa.gov]
Cc: Field, Jeff[Field.Jeff@epa.gov]; Juett, Lynn[Juett.Lynn@epa.gov]; Washburn, Ben[washburn.ben@epa.gov]
From: Vann, Bradley
Sent: Sun 10/18/2015 4:51:32 PM
Subject: FW: West Lake CAG Tech Meeting

Chuck, we can discuss Monday morning. Having a tech call with smaller CAG group later on Monday but need to review and come prepared with some discussion of how this scenario is not west lake. Obvious (having been in the army at that time in Europe and monitoring Chernobyl fallout patterns) as that situation involved an actual nuclear meltdown of the power plant core, multiple explosions, fire and a subsequent forest fire that burned many square miles. All of which spread highly radioactive materials across large section of the continent. Would be good to have you on the tech call if available. We need to address this kind of misunderstandings with the CAG TC so they can carry that information back to the CAG as a whole. Understand if too short of notice. Thanks,

Bradley Vann - Remedial Project Manager

U.S. Environmental Protection Agency

Superfund Division

Missouri/Kansas Remedial Branch

11201 Renner Blvd.

Lenexa, KS 66219

Phone: 913-551-7611

Fax: 913-551-9611

Cell: 816-714-0331

From: Ed Smith [mailto:esmith@moenviron.org]
Sent: Saturday, October 17, 2015 12:11 PM
To: Debi Disser <ddisser65@gmail.com>
Cc: Erin Harman <isb5@cdc.gov>; r s <rlsteelstl@yahoo.com>; Dawn Chapman <dmcteacher@gmail.com>; Bob & Jean Nowlin <nowlinbobjean@sbcglobal.net>; Gale Thackrey <gthackrey@fsmonline.org>; Vann, Bradley <Vann.Bradley@epa.gov>; Harvey Ferdman <HarveyFerdman@aol.com>; Washburn, Ben <washburn.ben@epa.gov>; Terrie Boguski <tboguski@skeo.com>; Mary Catherine <mm1554@truman.edu>; Kirby Webster <kwebster@skeo.com>; Milward, Mark <mmilward@stlouisco.com>; Gwendolyn Verhoff <gverhoff@att.net>; Doug Clemens <douglas.clemens@att.net>

Subject: Re: West Lake CAG Tech Meeting

Hello all,

Given the recent release of the ATSDR report, I'd like to add a discussion of the report to the agenda. I'd also like to discuss how surface fires in the Chernobyl exclusion zone have dispersed radioactive materials, including Plutonium, which has a similar atomic weight to the radioisotopes found at the West Lake Landfill. Below are two studies of fires in the Chernobyl zone for EPA's review and use as it determines fire risk at the site.

Chernobyl Forest Fires

Transport of Radioactive Materials by Wildland Fires in the Chernobyl Accident Zone: How to Address the Problem

Sergey I. Dusha-Gudym

1992 Forest Fires in Chernobyl Alienation Zone

Description

The nuclear meltdown at Chernobyl in 1986 contaminated over 15 million acres of surrounding forest with associated radionuclides. Over 250,000 acres of this are considered to be part of the alienation zone, which possesses a soil contamination density of Cs-137 ranging from 38.84 to 207.19 Ci/mi^2. "This region constitutes the largest area in the world with the highest contamination by radionuclides and is located in a fire-prone forest environment in the centre of Europe" (Dusha-Gudym 2005). This land is characterized by high frequency of forest fires that have resulted in significant transport of radionuclides. "Practically all grass mass contaminated by radionuclides and the most contaminated upper layer of peatlands burn during fires on unused areas and on other open places. The combustion products of dry grass mass go away to smoke emission" (Dusha-Gudym 2005).

Relevant Results and Conclusions

Radionuclide transport was predicted based on the 1992 forest fires in this region to travel hundreds of miles atmospherically. Content Cesium 137 in the atmosphere was seen to increase dramatically during fire peaks in May and August. "The analyses of forest fire smokes have showed that the content of radionuclides in smokes exceeded the permissible rate for inhabited areas several times. Ash and not fully burnt materials remained after forest fires are open sources of the ionizing radiation. By the contamination level they correspond very often with radioactive waste" (Dusha-Gudym 2005). Such forest fires allow radioactive waste to travel off site through smoke and pose a threat to surrounding areas.

Resuspension and redistribution of radionuclides during grassland and forest fires in the Chernobyl exclusion zone: part I. Fire experiments

V.I. Yoschenko, V.A. Kashparov , V.P. Protsak, S.M. Lundin, S.E. Levchuk, A.M. Kadygrib, S.I. Zvarich, Yu.V. Khomutinin, I.M. Maloshtan,

V.P. Lanshin, M.V. Kovtun, J. Tschiersch

Experimental Fires in Chernobyl Region

Description

This experiment performed experimental field fires in the exclusion zone surrounding Chernobyl. In this region "herbicide residues (McMahon and Bush, 1992) and radioactive iodine, caesium and chlorine were found in the smoke of biomass fires (Amiro et al., 1996). These trace substances may affect the surrounding of the fires and people in this area (e.g. forest workers and firemen)" (Yoschenko, et al. 2005).

Relevant Results and Conclusions

Through this study "an increase of several orders of magnitude of the airborne radionuclide concentration was observed in the territory near the fire area" (Yoschenko, et al. 2005). "Even at about 17 km [10.56 miles] distance from a forest fire an increase of the airborne 137 Cs concentration was measured (Garger et al., 1998)" (Yoschenko, et al. 2005). The study determined radionuclide activity density and contamination density in the area surrounding the fires for cesium, strontium, and plutonium. This experiment notably tests plutonium under these conditions, which is heavier than cesium and more similar in weight to the thorium and radium, which are contained within the West Lake site. "The heavier fractions of the radioactive aerosol are released at lower height and have higher deposition velocities; therefore, they are mainly deposited closer to the plot" (Yoschenko, et al. 2005). Plutonium deposition density in forest fires was determined to be smaller than deposition densities of the lighter elements studied, strontium and cesium, by 2 orders of magnitude [x 10^{-2}]. However the plutonium was still transported a significant distance from the initial plot, as shown in the following plot. Therefore transport of heavier radionuclides is still an area of concern.

Dusha-Gudym, Sergey I. "Transport of Radioactive Materials by Wildland fires in the Chernobyl Accident Zone: How to Address the Problem ." *International Forest Fire News*, January-June 2005: 119-125.

Yoschenko, V.I., et al. "Resuspension and redistribution of radionuclides during grassland and forest fires in the Chernobyl exclusion zone: part I. Fire experiments ." *Journal of Environmental Radioactivity* , no. 86 (2005): 144-163.

On Fri, Oct 16, 2015 at 7:08 PM, Debi Disser <ddisser65@gmail.com> wrote:

> I can attend. Will let you know if I have questions as soon as I finish reading Terri 's information
>
> On Oct 16, 2015 12:10 PM, "Ed Smith" <esmith@moenviron.org> wrote:
>
> > Hello all,
> >
> > Sorry for getting this out late. Are people available for a telephone conference call with Brad and Ben on Monday, October 19 at 4pm, to touch base with the CAG Tech Committee before the next CAG meeting, which is scheduled for the following

Monday?

We will meet via telephone conference call for the meeting on Monday and I'll provide call-in information later.

Proposed agenda

1) Update from EPA regarding progress on the isolation barrier and ongoing tests for the ROD amendment

2) Discuss what topics/issues we want to address for future CAG meetings. I would like to have a meeting in the near future (accompanying the release of the radioactive testing for the isolation barrier) with EPA & Corps.

3) Discuss the EPA's air monitoring report (as noted by Terrie in her email on 10/14) and the role TASC will play in the upcoming CAG meeting. Terrie may not be available to do a presentation if her grandchild is born, so we will need to have a contingency for the presentation. I hope Erin Harman will be able to participate if we discuss the EPA's air monitoring report and that we are able to see the report before the meeting (if possible).

4) Anything anyone else wants to add that I'm missing.

Please email me directly and let me know if 4pm works (or if a later time is better).

Thanks,

Ed

--

Ed Smith

Safe Energy Director

Missouri Coalition for the Environment

c: (314) 705-4975 w: (314) 727-0600 x14

www.moenviron.org

@MoEnviron

--

Ed Smith

Safe Energy Director

Missouri Coalition for the Environment

c: (314) 705-4975 w: (314) 727-0600 x14

www.moenviron.org

@MoEnviron